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ABSTRACT

This study examines whether students' age and/or gender impact their preferences for instructional practices thought to improve learning, and their preparation for college and performance in college. Students were asked which of 38 instructional practices they preferred, how often they experienced each practice, and how well prepared they felt in a variety of academic and nonacademic areas related to college success. The survey, which focused on reading, writing, math and other quantitative subjects, lectures, examinations, and other classroom activities, was given to a random sample (n=474) of undergraduate students at a metropolitan university; the response rate was 43 percent. In general, the strongest preferences were for the following practices: providing clear directions, with specific feedback, for writing assignments; feedback on why test answers were right or wrong; return of written assignments within a reasonable time; and explanations of how writing assignments would be evaluated. The survey shows that these preferred practices are frequently absent from the classroom. In terms of direct instruction and self-perceptions, older students differ very little from younger students. In the area of instructional preferences, there were differences for age, but not for gender. There were few differences in students' perceptions of their ability to handle the demands of college. (Contains 24 references.) (RH)

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Age and Gender Differences in Instructional Preferences

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Age and Gender Differences in Instructional Preferences

The era of the "traditional" college student is gone, especially at urban and metropolitan colleges and universities. In place of the young, male student who lived in the dorm and carried a full-time load, college campuses often have a student population that is predominantly female with an average age in the late 20s. According to the 1997 Digest of Education Statistics, between 1985 and 1995, enrollment increased 16 percent from 12.2 million to 14.3 million in higher education. Much of this growth was due to females and older students. While the number of men enrolled rose 9 percent, the number of women increased 23 percent. The number of older students also began to grow rapidly. For the same time period, the enrollment of persons ages 25 and over rose by 22 percent.

Some researchers have indicated that older adults and women approach learning differently than the traditional male college student (e.g., Belenky, Clinchy, Goldberger, & Tarule, 1986; Knowles, 1984; Luttrell, 1989; Merriam & Caffarella, 1991). In fact, the literature base on adult learning is huge, and alternative conceptions of adult learning in formal settings abound (see Knowles, 1980, 1987; Brookfield, 1986, Marsick, 1987, 1988, 1990; Hiemstra and Sisco, 1990). The best-known conceptualization is Knowles' andragogical model of instruction which emphasizes the learner as mutual partner in each step of the instructional process, from diagnosing needs, to formulating objectives, designing approaches to the learning experience, and evaluating results. Though this may be the ideal approach, Merriam and Caffarella (1991) note, however, that adult learning in formal settings, for the most part, is still instructor designed and directed and allows little input from the adult learner.

Not only are the theories of andragogy (adult learning) seldom put into practice, some also question whether adults actually learn any differently than children do. In terms of memory and cognition, few changes have been found in sensory and short-term memory as people age (Merriam and Caffarella, 1991). However, longer-term memory deficits are more commonly found (Hayslip and Panek, 1989; Craik, 1997; Rybash, Hoyer, and Roodin, 1986; Salthouse, 1982). Older adults appear to be less efficient at organizing new material. Yet "when older subjects are given clues ahead of time about what they will later have to remember, or are shown how to organize the material in an effective way, the age differences in recall decline" (Bee, 1987, p. 215). Older adults also appear to have more difficulties in

retrieving information, and process it at a shallower level and with less speed (Merriam and Caffarella, 1991). As Merriam and Caffarella (1991, p. 166) note, "A number of authors have suggested ways to integrate training in memory skills into formal learning programs for adults: providing both verbal and written cues, such as advance organizers and overheads, when introducing new material to students; reviewing at the beginning of each session key material covered at previous sessions; and giving opportunities to apply the new material as soon after the presentation as possible (See Know, 1977, 1986; Jones and Cooper, 1982; DiVesta, 1987, for a thorough discussion of these ideas.)"

There also have been increasing amounts of research on how women learn. In their seminal study of women's ways of knowing, Belenky and colleagues (1986) found that trust and collaboration worked best to produce powerful learning experiences. As Merriam and Caffarella (1991, p. 295) summarize: "The 'banking' model of education, in which knowledge is deposited into the heads of learners, and the adversarial model, where one's thinking is challenged and doubted, were found to be 'debilitating rather than energizing' for women in their study (Belenky et al., 1986, p. 227)" They further quote Belenkey's conclusion that "educators can help women develop their own authentic voices...if they emphasize connections over separation, understanding and acceptance over assessment, and collaboration over debate" (Belenkey et al, 1986, p. 229).

Based on their review of the literature, Merriam and Caffarella (1991, p. 295) ask "Is there a 'best' method for everyone? What place is there for the educator's expertise and knowledge? What instructional options should learners be presented with? To what extent should gender or age or ethnicity be taken into account in designing instruction?" While their questions were meant to provoke thought, this study is a partial attempt to answer those questions. Surely if the majority of our student bodies require different approaches to learning, then institutions should know if there are things they need to do to ensure the success, satisfaction, and retention of this increasingly important group. The question is whether we are talking about good instruction in general for *all* students regardless of age and gender or if distinctions need to be made.

In addition, all models of student academic success include factors such as academic preparation, motivation, and educational goals as part of their explanation of success (see Tinto, 1987 for some of the seminal work in this area). Traditional wisdom has it that women and older students arrive at college

feeling less self-assured than others about their abilities to handle college work. Older students, however, are often especially motivated and focused on achieving their educational goals, having gained the maturity and perspective from years of out of school. While women typically have higher GPAs in College (Astin, 1991), older students also are often excellent performers in college. Some of these factors, then, will also be explored for gender and age differences as possible explanations of differences in instructional preferences.

This study, then, asked two basic questions: 1) Are there gender and age differences on preferences for a variety of instructional practices which improve learning? 2) Are there gender and age differences on self-reported perceptions on readiness for college in terms of academic skills, organizational skills, motivation, and commitment to educational goals? These questions were addressed within the context of what students prefer in the way of instructional practices and how often they find them in the classroom.

Methodology

Survey Design

Using research reviews of instructional practices that promote learning and texts that provide advice on teaching undergraduates, a survey was developed that listed instructional practices in the areas of reading, writing, math and other quantitative classes, lecture, examinations, and other general classroom (see Belcheir, Armstrong and McKinnon, 1998 for further details on the research base of the survey). On the survey, students were first asked to indicate how much they preferred each of 38 practices and then to indicate how often they experienced each practice. In addition, students were asked how well they thought they were prepared in a variety of academic and non-academic areas related to college success. Using a 1-to-10 scale, students rated themselves on preparation for college, knowing what they wanted from an education, motivation to continue their education, time to devote to education, and skills in reading, writing, math, note-taking, test-taking, and organizing. (See Appendix A for a copy of the survey).

Cronbach's Coefficient Alpha was used as a measure of reliability/internal consistency of the survey. For the 38 items related to students' preferences of instructional practices, the reliability was .91. For the ratings of frequency of the practices' occurrence, the reliability was .92. Both of these reliabilities are

quite acceptable. The reliability was .76 for the 10 self-report items on preparation for college. Cumulative GPA was obtained from college records.

Sampling and Response

The study was conducted at a single metropolitan university with about 15,000 students, 85% of whom are undergraduates. A random sample of 474 undergraduate students was mailed the survey and 204 or 43% replied. Because only 43% of those surveyed responded, initial analyses focused both on describing the students in the study and analyzing whether they differed in significant ways from those who did not respond. No differences were found on ethnicity, class rank, or probability of returning. By class level, 10% of respondents were freshmen, 33% were sophomores, 19% were juniors, and 38% were seniors. Most (85%) were white non-Hispanics. About 80% were retained, indicating they either graduated in Spring 1997 or re-enrolled the following fall.

Respondents did differ from non-respondents on gender, age, and cumulative GPA. Women were more likely to respond than men (χ^2=7.667, p=.006). About 67% of the responding group were females compared to only 54% of the non-responding group. Older students also were more likely to respond (F=27.76, p=.0001). The average age of respondents was 29.6 compared to 25.6 for non-respondents. Finally, those with higher GPAs were more likely to respond (F=10.77, p=.0011). The mean cumulative GPA for respondents was 2.97 versus 2.78 for non-respondents.

Data Analysis

For this analysis, two independent variables were employed: gender and age. The gender category had 135 females and 67 males. Age was divided into three categories: 18-22 years old (65 students), 23-29 years old (59 students) and 30 and older (78 students). Two sets of dependent variables were employed. One set consisted of preference ratings of the 38 instructional practices items. The other set included the 10 self-report ratings on preparation for college along with cumulative GPA. To test whether there were overall significant differences in each set of data, the MANOVA procedure using the Statistical Analysis System (SAS) and the General Linear Model (GLM) was employed. Because the interaction between age and gender was non-significant at the p=.05 level for both sets of data, separate analyses were then conducted for gender and age. Only when a MANOVA test of overall significance reached or exceeded the alpha level of .05 were ANOVA tests performed for each variable.

Findings

Instructional Preferences and Practices

Table 1 provides the overview of what respondents said both in terms of the extent they preferred the 38 instructional practices included in the survey and the extent to which students found the practices occurring in their classrooms. In terms of mean ratings, students in general showed the strongest preference for the following practices:

- Providing clear directions/format for the writing assignment
- Providing specific feedback on writing assignments
- Providing feedback on why test answers were right or wrong
- Returning writing assignments within a reasonable timeframe
- Explaining how writing assignments will be evaluated

Insert Table 1 about here

While over 95% of the students preferred these practices, students indicated that the percentage of time these practices occurred "almost always" or "often" ranged from 64.5% for returning writing assignments promptly to 42.5% for providing specific feedback on their work.

Among the practices that students least preferred were having frequent quizzes (28% strongly agreed or agreed they preferred instructors who used this practice), using small groups in class for discussion or working together (50% agreed) and requiring attendance (50% agreed). Required attendance was a classroom practice found "almost always" or "often for about 40% of the students responding. Only 16% had frequent quizzes in their classes and only 22% had classes where small groups were used for discussion or working together either "almost always" or "often".

Teaching study technique and allowing math assignments to be re-done were the instructional practices least likely to be found in classrooms. Over 80% of the respondents reported they found these practices in their classrooms "occasionally" or "almost never." Other practices which were seldom seen in classrooms included providing study guides for readings, creating an interest in reading assignments,

providing sample essays for writing assignments, providing summaries at the end of lectures, and giving sample test questions prior to tests.

Differences in Instructional Preferences by Age and Gender

Using Wilks' Lambda as the multivariate statistic, a significant overall effect for age was found for the 38 instructional preference items (F=1.38, p=.0339). No significant effect was found for gender.

Differences were found, however, for only four of the variables. The youngest group of students more strongly preferred that study guides for readings be provided (F=3.39, DF=2,168, p=.0360) and that a variety of visuals be used during lectures (F=3.05, DF=2,168, p=.0499) compared to students 30 and older. The youngest group of students also differed from both other age groups in their preference for humor in the classroom. Only in the area of required attendance did students aged 30 and over show stronger preferences than either of the other two age groups (F=8.21, DF=2,168, p=.0004). Details can be found in Table 2.

Insert Table 2 about here

Readiness for College

Using Wilks' Lambda as the multivariate statistic, an overall gender effect was found for the 10 self-report items and cumulative GPA (F=3.915, p=.0001). A significant overall effect for age also was found (F=2.15, p=.0022).

For gender, differences were found in four areas of preparation and performance: organizational skills (F=9.55, DF=1,198, p=.0023), math skills (F=11.37, DF=1,198, p=.0009), note-taking skills (F=7.90, DF=1,198, d=.0054) and cumulative GPA (F=3.75, DF=1,198, p=.0544). Women had higher ratings than men in all areas except self-reported ratings of mathematics skills (see Table 3).

Insert Table 3 about here

The age groups differed from one another in three areas: knowing what you want from an education (F=4.35, DF=2,197, p=.0142), motivation to continue your education (F=4.55, DF=2,197, p=.0116), and cumulative GPA (F=7.68, DF=2,197, p=.0006). In the area of knowing what they wanted from an

education, students who were 30 and older were much clearer about this than the youngest group of students. The same was true of motivation. Perhaps it was not surprising to find also that students 30 and older had an average GPA that was significantly higher than either other age group. See Table 4 for details.

Insert Table 4 about here

Summary

This study asks whether students' age and/or gender have an impact on preferences for 38 instructional practices thought to improve learning and on preparation for college and performance in college. In the area of instructional preferences, an overall MANOVA test showed significant differences for age but not gender. Follow-up tests showed significant results for only four items: using humor, providing study guides for reading, requiring attendance, and using a variety of visuals in lecture situations. With the exception of requiring attendance, younger students showed a stronger preference for these instructional practices than older students did.

In addition, students showed few differences in their perceptions of the ability to handle the intellectual, emotional, and organizational demands of college. Women rated themselves higher than men did on organizational skills and note-taking skills while they rated themselves lower in math. Women's average cumulative GPA was significantly higher than men's as were older students' GPAs compared to younger. Older students also considered themselves more motivated to continue their education and more knowledgeable about what they wanted from an education.

Generally, all students showed the strongest preferences for feedback on their writing and their tests and for specific directions to guide their writing. Faculty were least likely to attend to instructional practices that related to course readings. They also were unlikely to summarize the key points of the lecture at the end of class. Despite research findings that adults are less efficient at organizing new material, younger students preferred these organizers just as much. Older adults probably had higher GPAs because of their motivation and commitment to their educational goals rather than due to any instructional practices that made learning easier for them.

These results indicate that in terms of direct instruction and self-perceptions, older students differ very little from younger students. The key seems to be promoting good teaching practices for all students rather than worrying about instructional methods that differentiate based on age or gender. Results of the survey indicate, too, that while students have strong preferences for most of the instructional practices included in the survey, these same practices are frequently absent from the classroom. Effort should be spent, therefore, in moving beyond the 50-minute lecture.

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Table 1. Perceived Preference and Occurrence of Instructional Practices by Undergraduates

		% responding that practice occurred:				
Practice:	Percent agreeing	Almost always	Often	Half the time	Occasionally	Almost never
Reading Assignments:						
Explain important textbook information in class	94.6	14.0	32.5	34.5	16.5	2.5
Provide study guides for reading selections	66.0	6.0	14.4	17.4	37.3	24.9
Identify key information in readings	89.2	6.6	29.3	33.8	23.7	6.6
Introduce major ideas and key points before reading the assignment	70.1	4.0	20.9	25.4	27.9	21.9
Explain purpose or importance of readings	77.5	5.5	18.4	33.8	23.9	18.4
Create interest in the reading assignments	77.3	4.0	10.5	28.0	35.5	22.0
Define and explain key terms in reading	79.4	6.0	28.6	31.2	22.1	12.1
Teach study techniques and special ways to remember textbook information	62.1	1.5	3.5	14.5	34.0	46.5
Writing Assignments:						
Provide clear directions/format for the assignment	98.0	13.5	39.5	34.5	11.0	1.5
Provide sample essays	66.3	2.0	10.0	19.5	34.5	34.0
Explain how the assignment will be evaluated	93.1	13.0	40.5	24.5	15.5	6.5
Encourage several drafts before grading	62.6	6.0	20.5	26.0	27.0	20.5
Provide specific feedback on work	96.0	11.5	31.0	35.0	17.0	5.5
Return assignments w/in a reasonable timeframe	96.0	26.5	37.0	24.0	10.5	2.0
Math/Quantitative Assignments:						
Discuss real world use of math-based concepts	86.6	10.6	21.1	26.7	26.1	15.6
Work out difficult homework problems in class	94.7	25.4	33.1	29.3	7.7	4.4
Give sample problems that have been worked out	89.3	13.3	27.8	30.0	16.7	12.2
Encourage students to form study groups	55.4	10.0	17.2	27.2	28.3	17.2

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		% responding that practice occurred:				
Practice:	Percent agreeing	Almost always	Often	Half the time	Occasionally	Almost never
Allow assignments to be re-done	61.0	2.2	6.1	8.4	27.9	55.3
Lecture situations:						
Provide overviews or outlines before lecturing	80.3	6.5	21.4	26.9	27.9	17.4
Use variety of examples to explain concepts	94.1	9.0	33.0	39.0	15.0	4.0
Allow time in class for students' questions	95.1	30.2	34.2	26.6	8.0	1.0
Use a variety of visuals to supplement lectures	84.7	8.0	30.2	32.7	23.1	6.0
Break up lectures with other activities (e.g., discussions, film clips)	77.9	6.0	14.6	37.7	31.2	10.6
Provide summaries at the end of the lecture	70.0	2.0	10.6	19.6	37.2	30.7
Use humor	91.7	8.0	28.1	36.2	21.6	6.0
Examinations/tests:						
Have frequent quizzes so I know how I'm doing	27.9	2.5	13.1	35.2	35.2	14.1
Encourage the formation of study groups	57.6	8.2	16.8	29.1	32.1	13.8
Provide timely information about type of questions and content to be covered	93.6	12.6	33.8	33.3	16.2	4.0
Give sample test questions prior to the tests	80.8	5.0	11.5	29.5	35.0	19.0
Provide a review session before the exam	87.2	13.0	25.5	29.5	18.5	13.5
Return tests promptly	92.6	29.5	46.0	14.5	7.5	2.5
Provide feedback on why answers were right or wrong	94.6	18.7	28.8	25.8	14.6	12.1
General practices:						
Use small groups in class for discussion or work	50.2	5.1	16.7	25.3	39.9	13.1
Have frequently graded homework so I now how I'm doing	58.1	5.5	17.0	30.5	30.5	16.5

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		% responding that practice occurred:				
Practice:	Percent agreeing	Almost always	Often	Half the time	Occasionally	Almost never
Require attendance	50.2	12.6	27.3	27.8	21.7	10.6
Are available outside of class	92.5	35.7	35.7	16.1	11.6	1.0
Encourage the use of tutorial services if needed	74.9	14.1	21.7	33.8	16.7	13.6

Table 2. Significant mean differences in instructional preferences by age

Instructional Preferences[1]	Age Categories					
	18-22		23-29		30 and up	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Provide study guides for readings[2]	1.77	.84	1.98	.92	2.26	.94
Use variety of visuals in lectures[3]	1.67	.74	1.97	.83	1.79	.73
Use humor in lectures[4]	1.32	.50	1.64	.76	1.65	.64
Require attendance[5]	3.02	1.39	2.75	1.32	2.22	1.17

[1] Lower numbers indicate a stronger preference
[2] Post hoc tests found significant differences between the youngest and oldest groups. The effect size was .47
[3] Post hoc tests failed to find any significant differences. The largest effect size (.43) was between the middle and the youngest group
[4] The effect size was .49 between the middle and youngest groups and .45 between the oldest and youngest groups. The middle and oldest group means were not significantly different.
[5] The effect size was .72 between the youngest and oldest groups and .52 for the oldest and middle groups. The youngest and middle groups were not significantly different.

Table 3. Significant mean differences in preparation for and performance in college by gender

	Females		Males	
Preparation[6]/Performance variable	Mean	Std. Deviation	Mean	Std. Deviation
Organizational skills	8.06	1.94	7.12	2.29
Math skills	5.62	2.55	6.84	2.03
Note-taking skills	7.72	2.19	6.81	2.19
Cumulative GPA	3.04	0.66	2.85	0.68

Table 4. Significant mean differences in preparation and performance by age

Preparation/Performance items	Age Categories					
	18-22		23-29		30 and up	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Knowing what you want educationally[7]	7.51	2.71	7.79	2.51	8.63	2.03
Motivation to continue your education[8]	7.69	2.59	8.41	2.02	8.83	2.09
Cumulative GPA[9]	2.79	0.66	2.91	0.71	3.20	0.59

[6] Higher numbers indicate better preparation

[7] The effect size was .47 comparing the means of the youngest and oldest groups. Other comparisons were not significant.

[8] The effect size was .50 comparing the means of the youngest and oldest groups. Other comparisons were not significant.

[9] The effect size was .64 comparing the oldest and youngest groups. It was .46 comparing the oldest and middle groups. The youngest and middle groups did not differ significantly from each other.